

=> d his

(FILE 'HOME' ENTERED AT 04:56:47 ON 25 SEP 2004)

FILE 'CA' ENTERED AT 04:57:00 ON 25 SEP 2004

L1 2641 S DILUT?(3A) (AUTOMAT? OR ONLINE OR INLINE OR ONSTREAM OR INSTREAM OR
FLOW(1A) INJECT? OR SAMPLE(1A) PREPAR? OR LINE OR STREAM)
L2 127 S L1 AND MASS SPECTRO?
L3 126 S L1 AND ISOTOP?
L4 131 S L2-3 NOT PY>2000
L5 93 S L2-3 AND DILUT?(1A) (AUTOMAT? OR ONLINE OR INLINE OR ONSTREAM OR
INSTREAM OR FLOW(1A) INJECT? OR SAMPLE(1A) PREPAR? OR LINE OR STREAM)
L6 68 S L4 AND L5
L7 6 S L4 AND (ELECTROSPRAY OR IONSPRAY OR THERMOSPRAY OR (ELECTRO OR ION
OR THERMO) (W) SPRAY OR ATMOSPH? (W) PRESSURE (W) (IONIZ? OR INTERFAC?))
L8 7 S L5 AND 2001/PY
L9 78 S L6-8

=> d l9 bib, ab 1-78

L9 ANSWER 5 OF 78 CA COPYRIGHT 2004 ACS on STN
AN 135:238753 CA
TI **Flow injection on-line dilution** for multi-element determination in
human urine with detection by inductively coupled plasma **mass
spectrometry**
AU Wang, J.; Harald Hansen, E.; Gammelgaard, B.
CS Department of Chemistry, Technical University of Denmark, Lyngby, 2800,
Den.
SO Talanta (2001), 55(1), 117-126
AB A simple **flow injection online diln.** procedure with detection by
inductively coupled plasma **mass spectrometry** (ICP-MS) was developed for
the detn. of Cu, Zn, As, lead, Se, Ni and Mo in human urine. Matrix
effects were minimized by employing a diln. factor of 16.5 with online
std. addn., and 103Rh was used as internal std. to compensate for
signal fluctuation. The procedure was validated by the anal. of two
std. ref. materials SRM 2670 (NIST) and Seronorm Trace Elements in
Urine. Recovery expts. were performed by spiking the ref. materials as
well as artificial urine. The detection limits ($\mu\text{g L}^{-1}$) were 0.12,
0.96, 0.30, 0.09, 0.45, 0.08, 0.09, and the precisions (relative std.
deviation, %) were 2.6, 2.3, 3.0, 3.7, 3.7, 4.9, 2.8 for Cu, Zn, As, Pb,
Se, Ni and Mo, resp. The procedure was applied to the anal. of 41
human urine samples. No correlations between the concns. of the
elements were obsd.

II9 ANSWER 9 OF 78 CA COPYRIGHT 2004 ACS on STN
AN 133:358821 CA
TI Rapid bioanalytical determination of dextromethorphan in canine plasma
by dilute-and-shoot preparation combined with one minute per sample LC-
MS/MS analysis to optimize formulations for drug delivery
AU McCauley-Myers, D. L.; Eichhold, T. H.; Bailey, R. E.; Dobrozsi, D. J.;
Best, K. J.; Hayes, J. W.; Hoke, S. H.
CS Health Care Research Center, The Procter and Gamble Company, Mason, OH,

45040, USA

SO Journal of Pharmaceutical and Biomedical Analysis (2000), 23(5), 825-835

AB The detn. of dextromethorphan in canine plasma is used to demonstrate the high throughput bioanal. approach of **automated dil.-and-shoot (DAS) sample prepn.** followed by a 1 min isocratic liq. chromatog. tandem **mass spectrometry** (LC-MS/MS) anal. Dil.-and-shoot prepn. is commonly used for the detn. of drugs in several biol. matrixes such as urine and saliva, but is not typically used with plasma samples because the amt. of protein present in plasma can lead to a variety of problems including column failure. As a result, plasma sample prepn. usually removes protein by pptn., extn. or filtration; however, the dil.-and-shoot approach solubilizes proteins throughout the chromatog. portion of the assay. The attributes of this approach are compared with a previously validated liq./liq. extn. procedure for detn. of dextromethorphan in plasma. Accuracy and precision of both methods are similar. The lower limit of quantitation (LLOQ) of the dil.-and-shoot approach is much higher at 2 ng/mL vs. 5 pg/mL with the liq./liq. extn.; however, the sample throughput of the prepn. portion of the dil.-and-shoot approach is more than 50-fold greater. The ruggedness of the dil.-and-shoot method was thoroughly investigated because of the problems traditionally assocd. with the direct injection of dild. plasma onto an LC-MS/MS instrument. With the optimal conditions, greater than 1000 injections of dild. plasma have been successfully performed on a single column in less than 19 h making this technique an excellent approach for the rapid prepn. and high throughput of plasma samples contg. drug levels in the ng/mL range or higher. Application of this methodol. to measure the levels of dextromethorphan in canine plasma to evaluate drug delivery from various formulations is also presented.

✓
L9 ANSWER 11 OF 78 CA COPYRIGHT 2004 ACS on STN

AN 133:232176 CA

TI Uncertainty calculations for amount of chemical substance measurements performed by means of **isotope dilution mass spectrometry** as part of the PERM project

AU Dobney, A.; Klinkenberg, H.; Souren, F.; Van Borm, W.

CS DSM Research, Geleen, 6160 MD, Neth.

SO Analytica Chimica Acta (2000), 420(1), 89-94

AB DSM Research was a partner in the certification round of a project, organized under the auspices of the European Commission's Fourth Framework Stds. Measurement and Testing Program, to produce two polyethylene ref. materials. The project, entitled Polymer Elemental Ref. Material (PERM SMT4-CT95 3024) required the detn. of the concns. of Cr, Cd, Hg and Pb in two polyethylene materials which were identified as PERM T3 high and PERM T3 low. Anal. was accomplished by an inhouse developed '**online**' **isotope diln. mass spectrometry** (IDMS) method using quadrupole ICPMS. This paper focuses on calcg. the uncertainty of these IDMS measurements. Since all anal. measurement results have an uncertainty assocd. with them, it is considered best practice, within metrol. circles, to state an uncertainty, as an

integral part of any measurement result. The authors used a Monte Carlo simulation to est. the uncertainties assocd. with the measured concns. of Cr, Cd, Hg and Pb in the PERM T3 (high and low) materials. By participating in an interlab. exercise the authors were able to compare the authors' results with those of other labs. that used both classical IDMS and other techniques. The authors' results agreed with the overall mean of all participating labs., within stated uncertainties. Also the authors' uncertainties derived from Monte Carlo simulation were of the same magnitude as those obtained for the classical IDMS approach.

L9 ANSWER 16 OF 78 CA COPYRIGHT 2004 ACS on STN

AN 131:222686 CA

TI Use of FIA systems for on-line dilution in multielement determination by ICP-MS

AU Gomes Neto, Jose Anchieto; Silva, Jose Bento Borba; Souza, Ivan Goncalves; Curtius, Adilson Jose

CS Departamento de Quimica Analitica, Instituto de Quimica - UNESP, Araraquara, 14800-900, Brazil

SO Laboratory Robotics and Automation (1999), 11(4), 240-247

AB A flow-injection (FI) system to match concns. was used as an auto-diluter in multielement detn. by inductively coupled plasma-mass spectrometry (ICP-MS). The flow system comprised loop-based injection or a timed valve that introduced a variable sample vol. into a spray chamber through a std. Meinhard nebulizer of an ICP-MS. Routinely analyzed samples such as H₂O, plant, and steel were selected. The accuracy of multielement detn. was checked against H₂O std. ref. material from the National Institute of Stds. and Technol. (1643d), plant std. ref. material from the National Bureau of Stds. (1572 citrus leaves), and steel std. ref. material from the National Bureau of Stds. (AISI 4340). The measuring system was calibrated with a multielement soln., yielding a linear plot with good precision [relative std. deviation < 3%, n = 12]. The results were in agreement at a 95% confidence level with the certified values for the ref. materials and also with those obtained by continuous aspiration and by (FI) with a discrete vol.

L9 ANSWER 17 OF 78 CA COPYRIGHT 2004 ACS on STN

AN 130:288716 CA

TI Improving sensitivity and detection limits in ICP-MS with a novel high-efficiency sample introduction system

AU Debrah, Ebenezer; Legere, Guy

CS Perkin-Elmer Sciex Instruments, Concord, ON, L6K 4V8, Can.

SO Atomic Spectroscopy (1999), 20(2), 73-77

AB The analyte transport efficiency using pneumatic nebulization is often limited by the spray chamber. Newer spray chamber designs with improved flow patterns still lose most of the analyze down the drain, esp. at sample flow rates >100 µL/min. This paper describes a novel sample introduction approach for plasma spectrometry that improves the analyze sensitivity by at least an order of magnitude for the elements tested, with significantly enhanced detection limits compared to

conventional soln. nebulization. Very good agreement was achieved between the certified values and the results obtained using this approach for the detn. of trace elements in the std. ref. material NI-ST 1643d. The short-and long-term stability in different sample matrixes was <3% and 4%, resp. This novel sample introduction system also allows real-time **online** sample **diln.** to be

L9 ANSWER 21 OF 78 CA COPYRIGHT 2004 ACS on STN

AN 130:60255 CA

TI The CETAC ADX-500 autodiluter system: a study of dilution performance with the ELAN 6000 ICP-MS and ELAN software

AU May, Thomas W.; Wiedmeyer, Ray H.

CS Biological Resources Division, Columbia Environmental Research Center, U.S. Geological Survey, Columbia, MO, 65201, USA

SO Atomic Spectroscopy (1998), 19(5), 143-149

AB The CETAC ADX-500 autodiluter system was tested with ELAN v. 2.1 software and the ELAN 6000 ICP-MS instrument to det. **online automated diln.** performance during anal. of std. solns. contg. nine analytes representative of the mass spectral range (mass 9 to mass 238). Two or more diln. schemes were tested for each of 5 test tube designs. Diln. performance was detd. by comparison of analyte concn. means of dild. and nondild. stds. Accurate dilns. resulted with one syringe pump addn. of diluent in small diam. round-bottomed (13 mm OD) or conical-tipped (18 mm OD) tubes and one or more syringe pump addns. in large diam. (28 mm OD) conical-tipped tubes. Inadequate diln. mixing which produced high analyte concn. means was obsd. for all dilns. conducted in flat-bottomed tubes, and for dilns. requiring multiple syringe addns. of diluent in small diam. round-bottomed and conical tipped tubes. Effective mixing of dild. solns. depends largely upon tube diam. and liq. depth: smaller tube diams. and greater liq. depth resulted in ineffective mixing, whereas greater tube diam. and shallower liq. depth facilitated effective mixing. Two design changes for the autodiluter were suggested that would allow effective mixing to occur using any diln. scheme and tube design.

L9 ANSWER 26 OF 78 CA COPYRIGHT 2004 ACS on STN

AN 127:365434 CA

TI **Online dilution** for ICP-MS with a flow injection recirculating loop manifold

AU Tyson, Julian F.; Ge, Honghong; Denoyer, Eric R.

CS Dep. Chemistry, Univ. Massachusetts, Amherst, MA, 01003-34510, USA

SO Journal of Analytical Atomic Spectrometry (1997), 12(10), 1163-1167

AB A FI manifold consisting of a recirculation loop was coupled to a plasma source **mass spectrometer** to provide successive **online dilns.** Part of the loop is injected into the carrier **stream** followed by **diln.**, within the loop, of the remaining part with the carrier soln. For a manifold with a calcd. diln. factor of 2.01 (based on the vol. ratio), 10 successive injections gave a mean of 1.99 and a 95% confidence interval of ± 0.065 for the ratio of successive peak heights. The between-run precision for a particular peak height ranged from 1.7 to 3.2% relative std. deviation. In a study of the decay of the concn.

oscillations in the recirculating loop, the reciprocal of the time to achieve uniform concns. decreased linearly with increasing flow rate and decreasing loop vol. The diln. behaviors of 19 elements were studied. Of these, nine (Ag, Ba, Cr, Cu, Ni, Pb, Sb, Tl and U) could be dild. from 100 ppb by three orders of magnitude with a precision of 5% relative std. deviation or better, six (As, Cd, Co, Th, V, Zn) could be dild. over the same range with precisions between 5 and 10% relative std. deviation, and four elements (Be, Mo, Se and Hg) displayed a systematic decrease in the diln. factor which was interpreted as retention of these elements within the loop. The influence of a wine matrix on the detn. of Ce was removed by five successive dilns. with a factor of 3.04 per injection for a total diln. factor of 260. For a total loop vol. of 1-2 mL, rapid damping of the concn. oscillations could be produced by the destructive interference produced by a two-line network (split and confluence) with tube lengths of 50 and 25 cm.

L9 ANSWER 31 OF 78 CA COPYRIGHT 2004 ACS on STN
AN 127:80343 CA
TI Analysis of Cr, Ni, Cd, and Pb in food samples by flow injection ICP-MS
AU Harrington, Christopher F.; Fairman, Ben E.; Catterick, Tim
CS Laboratory Government Chemist, Teddington, TW11 OLY, UK
SO Spectroscopy Europe (1997), 9(1), 10,12,14,16
AB A method was developed using flow injection anal. (FIA) for the **online diln.** and spiking with internal std. for the anal. of Cr, Ni, Cd, and Pb in food digests. The FIA method improved the reporting limits and accuracy for the anal. of a proficiency testing std. (aquacheck 101), and the reporting limits and accuracy for the anal. of an oyster tissue certified ref. material, compared to the conventional inductively coupled plasma optical emission spectroscopy (ICP-MS) method. The developed method is also quicker than the conventional method, as no off-line sample diln. is needed and it can be extended to cover up to 10 more elements.

L9 ANSWER 35 OF 78 CA COPYRIGHT 2004 ACS on STN
AN 126:282414 CA
TI Determination of trace amounts of zinc in water samples by **flow injection isotope dilution** inductively coupled plasma **mass spectrometry**
AU Hwang, Tarn-Jiun; Jiang, Shiuh-Jen
CS Department of Chemistry, National Sun Yat-Sen University, Kaohsiung, 80424, Taiwan
SO Analyst (Cambridge, United Kingdom) (1997), 122(3), 233-237
AB **Flow injection isotope diln.** ICP-MS was applied to the detn. of zinc in several water samples. A matrix sepn. and preconcn. system was used for the sepn. of Mg, Ca, S and Cl matrix and preconcn. of trace amts. of zinc in high salt content samples. A complete preconcn. cycle was accomplished in 4 min. The **isotope** ratio for each injection was calcd. from the peak areas of the flow injection peaks. The precision for the **isotope** ratio detn. was better than 1.7%. A detection limit of 0.014 ng/mL-1 was obtained for zinc with this method. The method was successfully applied to the detn. of trace levels of zinc in SLRS-2 riverine water, SLEW-2 estuarine water, NASS-3 open ocean seawater and

CASS-3 nearshore seawater ref. samples.

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IN ANSWER 38 OF 78 CA COPYRIGHT 2004 ACS on STN

AN 124:218822 CA

TI Evaluation of a flow injection system combined with an inductively coupled plasma **mass spectrometer** with **thermospray** nebulization for the determination of trace levels of platinum

AU Parent, M.; Vanhoe, H.; Moens, L.; Dams, R.

CS Laboratory of Analytical Chemistry, Institute for Nuclear Sciences, Ghent University, Proeftuinstraat 86, Ghent, B-9000, Belg.

SO Analytica Chimica Acta (1996), 320(1), 1-10

AB The coupling of a flow injection system to an inductively coupled plasma **mass spectrometer** using **thermospray** nebulization for the detn. of Pt is evaluated. The results are compared with pneumatic nebulization. The flow injection system provides the possibility of **online** sample **diln.** and **online** standardization. A comparative study was made between **online isotope diln.**, **online** std. addns. and external calibration emphasizing accuracy, precision and flexibility of the method. Several parameters of **thermospray** and flow injection were evaluated. Sensitivity, background and detection limits were studied as well as the peak integration method to be used with the flow injection system. The detection limits, using flow injection (200 µL loop) and partial integration of the peak, were in the range of 25 ng/l (5 pg abs.) and 8 ng/l (2 pg abs.) for pneumatic and **thermospray** nebulization, resp. The optimized procedure was used for the detn. of Pt in corn leaves, mouse liver and a Ca₃(PO₄)₂ matrix.

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IN ANSWER 43 OF 78 CA COPYRIGHT 2004 ACS on STN

AN 121:220600 CA

TI Mass-spectral analysis of gases

IN Brand, Willi; Habfast, Karleugen

PA Finnigan Mat GmbH, Germany

SO Brit. UK Pat. Appl., 22 pp.

PI GB 2273561 A1 19940622 GB 1993-24729 19931202

PRAI DE 1992-4242860 19921218

AB Mass-spectral anal. of gases supplied simultaneously or sequentially in a carrier gas to the spectrometer where a 1st component of the gases has a different vol. ratio with respect to the carrier compared to a 2nd component is characterized by decreasing the concn. of the component with the larger vol. ratio by an addnl. supply of carrier gas. App. operating on the open split system and characterized by provision of an addnl. **dilg. line** for the carrier gas is also disclosed.

✓
IN ANSWER 45 OF 78 CA COPYRIGHT 2004 ACS on STN

AN 121:101332 CA

TI Determination of lead by flow-injection inductively coupled plasma **mass spectrometry** comparing several calibration techniques

AU Goossens, Jan; Moens, Luc; Dams, Richard

CS Laboratory of Analytical Chemistry, Institute for Nuclear Sciences, Ghent University, Proeftuinstraat 86, Ghent, B-9000, Belg.

SO Analytica Chimica Acta (1994), 293(1-2), 171-81
AB In this paper the authors have evaluated the coupling of a modular flow-injection system to an inductively coupled plasma **mass spectrometer** for lead detns. by direct anal. of wines and urine samples. The flow-injection system used allows an **online** sample **diln.** and an **online** addn. of internal std. and calibrant soln. It was found that particular attention should be paid to the adjustment of the nebulizer gas flow rate in order to obtain max. sensitivity and precision. In this way and for the exptl. set-up described, R.S.D. values $\leq 1\%$ on the $^{208}\text{Pb}^+$ signal for 5 consecutive injections could readily be achieved. The relative merits of external calibration, std. addns. and **isotope** diln. for the calibration of the transient lead signals were compared. It appeared that from the viewpoint of accuracy, precision and flexibility, the std. addns. method is the most preferable procedure. Further, it was found that the precision of **isotope** ratio detns. is degraded in comparison to continuous nebulization. However, matrix-induced mass fractionation on the lead **isotope** ratios as obsd. for the continuous nebulization of an aq. ethanolic (wine) matrix did not occur in flow-injection anal. The quantitation of lead by direct anal. of undiluted wine and urine samples using this flow-injection method in combination with std. addns. calibration resulted in very accurate results (compared to certified and ref. values). Excellent relative std. deviations (for 5 consecutive detns.) were obtained ranging from 1% (50 $\mu\text{g/L}$ Pb in white wine) to 5% (3.6 $\mu\text{g/L}$ Pb in urine).

19 ANSWER 54 OF 78 CA COPYRIGHT 2004 ACS on STN
AN 115:131340 CA
TI Determination of serum cholesterol by **isotope** dilution **mass spectrometry** with a benchtop capillary gas chromatography/**mass spectrometer**: comparison with the national reference system's definitive and reference methods
AU Eckfeldt, John H.; Lewis, Linda A.; Belcher, John D.; Singh, Jasbir; Frantz, Ivan D., Jr.
CS Med. Sch., Univ. Minnesota, Minneapolis, MN, 55455, USA
SO Clinical Chemistry (Washington, DC, United States) (1991), 37(7), 1161-5
AB An **isotope** diln. **mass spectrometric** cholesterol method with $[^{25}, ^{26}, ^{27}\text{-}^{13}\text{C}]$ cholesterol as internal std. and a benchtop gas chromatog./**mass spectrometer** (GC/MS) was developed that is much easier and less time consuming than previously described Ref. and Definitive Methods for cholesterol. The internal std., cholesterol stds., and unknown specimen are delivered volumetrically with an **automated dilutor** and the sapon. reagent. After sapon., extn., and derivatization, specimens are injected into a benchtop quadrupole MS with an autosampler. Unknown cholesterol concns. are calcd. automatically by comparing the peak area ratio of the $m/z = 368, 371$ ion pair with the ratios for the cholesterol stds. (0-12.93 mmol/L). Within-run and day-to-day imprecision of 0.44% and 0.95% were found, resp. when specimens were assayed singly. In several lyophilized and frozen Std. Ref. Material

(SRM) pools, cholesterol results with this GC/MS method averaged 0.4% less than the National Institute for Stds. and Technol. definitive GC/MS result performed about three years earlier. The GC/MS results averaged 1.3% and 2.0% less than results by the National Ref. System (NRS) Abell-Levy-Brodie-Kendall (ALBK) results from clin. specimens and the SRM pools, resp. These results are consistent with the previously reported bias between the NRS Ref. and Definitive Methods and the 0.1% per yr decrease in cholesterol concns. in SRM pools as detd. by GC/MS anal. These results further emphasize the small but consistent bias between cholesterol results by **isotope diln. mass spectrometry** and the ALBK Ref. Method, the latter being the basis for the National Cholesterol Education Program guidelines and population ref. values.

L9 ANSWER 55 OF 78 CA COPYRIGHT 2004 ACS on STN
 AN 115:125715 CA
 TI Automated spike preparation system for **Isotope Dilution Mass Spectrometry**
 AU Maxwell, Sherrod L., III; Clark, John P.
 CS Westinghouse Savannah River Co., Aiken, SC, 29808, USA
 SO Nuclear Materials Management (1990), 19, 199-202
 AB **Isotope Diln. Mass Spectrometry** (IDMS) is a method frequently employed to measure dissolved, irradiated nuclear materials. An automated spike prepn. system was developed at the Savannah River Site (SRS) to dispense spikes for use in IDMS anal. methods. The new system employs a high precision SMI Model 300 Unipump dispenser interfaced with an electronic balance and a portable Epson HX-20 notebook computer to automate spike prepn. Using the computer to collect duplicate net wts. on a predetd. no. of spike containers, dispensing accuracy is confirmed by a statistically-based sampling plan. The d. of the spike soln., the vol. setting on the Unipump dispenser, and the calcd. net wts. of the spikes, the av. wt. of the spikes are calcd. along with the obsd. variance est. If the obsd. variance control limits, the spikes are released and treated as having equal quantities of the spiked **isotope** within the calcd. uncertainty est. This feature eliminates a whole layer of bookkeeping and the need to track individual spike containers and their individual quantities of the spiked **isotope**.

✓ L9 ANSWER 56 OF 78 CA COPYRIGHT 2004 ACS on STN
 AN 113:125836 CA
 TI Apparatus and process for producing low-concentration gas mixtures, especially for **mass spectrometry**
 IN Mettes, Jacques; Kimura, Takako; Schack, Michael
 PA Air Liquide SA pour l'Etude et l'Exploitation des Procèdes Georges Claude, Fr.
 SO Eur. Pat. Appl., 10 pp.
 PI EP 370151 A1 19900530 EP 1988-402920 19881121
 US 5054309 A 19911008 US 1989-437615 19891117
 PRAI EP 1988-402920 19881121
 AB The process and app. are described where gas mixts. are produced by a plurality of diln. steps of a high-concn. std. gas with a high-purity diluent gas. As soon as the high-purity diluent gas is generated, no

further contaminants such as gaseous impurities are added during the further mixing or dilg. steps of the process. Only orifices or needle valves are used in the mixing or **dilg. lines** while mass flow controllers and pressure regulators are placed upstream, at the output of the gas sources and/or downstream, i.e. in the gas venting lines. Application to trace anal. of gases with **atm.-pressure-ionization mass spectrometry** is indicated, as well as use of this process in manufg. semiconductor devices.

LV ANSWER 60 OF 78 CA COPYRIGHT 2004 ACS on STN

AN 112:131224 CA

TI **On-line dilution**, steady-state concentrations for inductively coupled plasma spectrometry achieved by tandem injection and merging-stream flow injection

AU Israel, Yecheskel; Lasztity, Alexandra; Barnes, Ramon M.

CS Lederle Grad. Res. Cent., Univ. Massachusetts, Amherst, MA, 01003-0035, USA

SO Analyst (Cambridge, United Kingdom) (1989), 114(10), 1259-65

AB Steady-state concns. have been achieved by **online diln., flow injection** techniques with conventional instrumentation. An approach employing tandem injection for **online diln.** was applied to obtain a steady-state concn. The deviation from signal stability resulting from concn. variations or ripples hampered exploitation of this approach for **online diln.** except over a limited range. However, when tandem injection was coupled with a single- or, esp., double-confluence for the diluent, diln. was achieved over a wide range (up to 900-fold). Further, steady-state concns. were obtained without concn. ripples. With the combined tandem injection and merging stream the emission signal variation with inductively coupled plasma (ICP) spectrometry compares well with that obtained for direct sample nebulization. Simple relationships for calcn. of the anticipated diln. have been derived and validated exptl. Flow configurations were designed to implement **online diln.** approaches under optimum conditions. Although these developments for **online diln.** are initially intended for sequential multielement ICP spectrometric anal., they should prove to be of general use.

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STN INTERNATIONAL LOGOFF AT 05:03:35 ON 25 SEP 2004

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(FILE 'HOME' ENTERED AT 13:42:39 ON 25 SEP 2004)

FILE 'CA' ENTERED AT 13:42:48 ON 25 SEP 2004

L1 535 S (SPIKE OR INTERNAL STANDARD) (3A) (DILUT? OR PREPARA?)
L2 160 S L1 AND ISOTOP?
L3 31 S L1 AND(AUTOMAT? OR COMPUTER OR MICROPROCESSOR)
L4 40 S L1 AND(ONLINE OR INLINE OR ONSTREAM OR INSTREAM OR LINE OR STREAM
OR FLOW INJECT?)
L5 12 S L2 AND L3-4
L6 7 S L3 AND L4
L7 19 S L5-6
L8 50 S L3-4 NOT PY>2000
L9 54 S L7-8

=> d bib,ab 1-54 19

L9 ANSWER 7 OF 54 CA COPYRIGHT 2004 ACS on STN
AN 130:147958 CA
TI Device and method for **automatic** preparation of sample solution.
IN Morioka, Akihiro; Yamanaka, Kazuo
PA Yokogawa Analytical Systems K. K., Japan
SO Jpn. Kokai Tokkyo Koho, 9 pp.
PI JP 11006788 A2 19990112 JP 1997-175146 19970617
PRAI JP 1997-175146 19970617
AB The title device is used for **automatic** sample soln. prepn. such as
diln. before anal. by inductively coupled plasma mass spectrometry or
at. emission spectrometry. The device comprises a sample soln.
container, a diln. soln. container, a mixer, sample soln. and diln.
soln. supply means, and a means to calibrate the final concn. using the
internal std. stored in the **diln.** soln.

L9 ANSWER 37 OF 54 CA COPYRIGHT 2004 ACS on STN
AN 105:34849 CA
TI Microrobotics LC autosampler
AU Bell, J. P.; Simpson, R. A.; Cunico, R. L.
CS Varian Instr. Group, Walnut Creek Div., USA
SO American Laboratory (Shelton, CT, United States) (1986), 18(5), 94, 96,
98, 100, 102-3
AB The model 9090 low-loss autosampler for liq. chromatog. (LC) is
designed for reliable, high-throughput operation, yet has the
flexibility and performance to handle a variety of research needs.
Programmable automix routines provide built-in liq. handling protocols
prior to **automated** anal. Applications discussed include **automated**
precolumn amino acid derivatizations and autodilns. Potential
applications include addn. of **internal std.**, **diln.** of stds. to prep. a
calibration curve **automatically**, pipetting reactants for enzyme assays,
optimizing chem. reactions, and addn. of buffering, stabilizing, or
modifying agents before injection.

=> log y

STN INTERNATIONAL LOGOFF AT 13:48:19 ON 25 SEP 2004